FY 2003 CANDIDATE PLUS PROGRAM

The Candidate Plus Program[1] has been doing its best to work proactively, respond to petitions, and promote conservation and recovery under the Endangered Species Act (ESA) for the last 5 years. While Atlantic salmon has received some funding increases recently, the rest of the program has not done as well. The intent of the program is to get ahead of the curve and work proactively to conserve species before they need to be listed under the ESA. In FY 2003, we submit a $2.39M initiative to **save white abalone from extinction ($1.38M)** and **develop our candidate species[2] program ($1.01M)**.

1. Desired Outcome: Assess abundance and distribution of and recover endangered white abalone population and ensure enforcement of ESA for white abalone. Conduct research and status reviews of candidate species to determine if any of them warrant protection under the Endangered Species Act (ESA), determine what can be done to protect them before listing becomes necessary, and disseminate information.

2. Brief Description of New Initiative: This initiative includes assessment, monitoring, and rebuilding of abalone populations using protection, translocation and stocking. The endangered white abalone is our first priority, but five abalone species will be assessed and monitored: green (*Haliotis fulgens*), black (*H. cracherodii*), red (*H. rufescens*), white (*H. sorenseni*) and pink (*H. corrugata*). All are in serious decline, with the white abalone already listed as an endangered species and the black abalone a candidate for listing. Recent surveys counted only 157 white abalone in US waters, and 75% of these were isolated individuals with little hope of successful reproduction. If the white abalone is lost, it will be the first commercial extinction in the US in some years. The more abundant red abalone will be used to test techniques, (transport, culture and brood stock management, security measures, and stocking) before using the endangered white abalone. The SWR will hire two enforcement agents to minimize poaching incidents.

Each region and science center will be staffed to address the needs of candidate species, avoiding the delays we are experiencing for white abalone recovery. The "candidate species" annual budget allocation bin will be increased so that NMFS can obtain the necessary information, conduct status reviews, fund conservation efforts, and disseminate information (outreach).

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[1]The Candidate Plus Program is responsible for all ESA actions involving species that are not marine mammals, sea turtles, or Pacific salmonids. This includes listed species such as Atlantic salmon, shortnose sturgeon, Johnson's seagrass, and white abalone, and candidates such as smalltooth sawfish, Puget Sound Pacific hake, Nassau grouper, and Atlantic sturgeon.

[2] NMFS defines candidate species as species for which NMFS has information indicating that protection under the ESA may be warranted, but for which it lacks sufficient information on status and threats to make a determination.

NMFS' candidate species list will be revised in FY 2002, and many species could be added. An important objective of NMFS' Strategic Plan is to prevent listings of species under the ESA. The need to list can be removed if actions are taken to mitigate and reverse factors for decline before species reach the point of being threatened or endangered. Conservation actions that could benefit these species include: changes in harvest regulations (rockfishes, groupers), use of marine protected areas (rockfishes, groupers), reduction of effluents (opossum pipefish), stock enhancement (abalone), fish passage improvements (Atlantic sturgeon, Alabama shad), redistributing spawning stock (abalone or other invertebrates), predator and exotic species control, and reducing potential for disease by limiting exotic species introductions. NMFS conducts research and status reviews on these species as funds become available to determine their needs. By learning more about these candidate species, NMFS may be able to recommend protective measures that can be implemented in a proactive manner, without the need to list the species.

NMFS must meet statutory deadlines under the ESA when petitioned to list a species, and it must conduct a status review based on the best available information. But the status review is only as good as the available information because the tight schedule under the ESA precludes NMFS from doing research that would provide useful information for a status review.

3. What needs to be done by NOAA?

Abalone

The initial step in recovery of the white abalone is a thorough inventory of the habitat and surviving individuals in US waters using a ROV. Divers will mark them with small transponders to facilitate future monitoring. We will model population growth under present conditions and under different recovery scenarios to aid in stock management during recovery.

Strategies for rebuilding the white abalone population include: 1) relocating isolated survivors to common sites to enhance existing, or create new, breeding colonies and, 2) relocating survivors into the lab as brood stock for preservation and restocking (once care, spawning and rearing techniques are well-developed). Implementation of a stocking program will likely require more time than relocation into breeding colonies, because the culture of white abalone has not been demonstrated.

Enforcement agents need to be hired in the SWR to minimize poaching incidents.

Candidate species

First NMFS needs to review the candidate species list, determine what other species should be on the list, and prioritize them according to their needs (data deficient, in need of a status review, conservation efforts). NMFS needs to direct funds to conduct status reviews or necessary research for these species (e.g., grouper complex, rockfish complex, Atlantic sturgeon, black abalone), either in-house or through contracts. Research needs include stock assessments, life history studies, and impacts of different factors on the status of these species. The Science Centers and F/PR need to hire FTEs to coordinate efforts directed at candidate species because currently, there are no dedicated FTEs in the Science Centers for this type of work, and F/PR is short-staffed as well. In future years, more FTEs need to be hired in the regions and science centers so that the Candidate Plus Program can work

proactively to address the ever increasing number of candidate species. Conservation actions such as the use of marine protected areas or elimination of pollutants can be taken to benefit candidate species before abundance levels plummet and ESA listings become necessary.

4. NOAA'S PARTNERS:

Abalone

Collaboration with Mexico and CDF&G are essential ingredients in any abalone recovery strategy. We propose to establish a cooperative program, through MEXUS and CalCOFI, whereby the SWFSC shall facilitate Mexican surveys for white, and other abalone stocks, in Mexican waters. This cooperative effort will develop a common data base, apply coast-wide population models, assess the genetic structure of the abalone stocks, and conduct joint research projects through technology transfer, education, and mutual assistance.

CDF&G is also an essential member of the abalone recovery team. The State of California is committed to rebuilding abalone populations and is currently developing an Abalone Recovery and Management Plan. We are partnering with CDF&G in surveying white abalone, and working together in planning the October 2001 symposium and workshop on rebuilding abalone stocks. A key issue in preserving abalone is to reduce poaching as the value of white abalone ($80/lb) is a strong temptation. Therefore, a vigorous and effective outreach and education effort is needed to protect the remaining animals. We propose an abalone watch program and intend to work with the California Sea Grant Advisor Program, and other groups, to establish this needed effort. Other abalone recovery partners include the University of California, National Park Service, Channel Islands Marine Research Institute, NOAA Channel Islands Marine Sanctuary, and US Navy.

Candidate species

Other parts of NOAA (OAR-NURP, Sea Grant), other Federal agencies (USFWS, USGS Biological Resources Division, USFS, BLM, ACOE), State agencies, environmental organizations (e.g., Center for Marine Conservation), academia, and local organizations will play a major role in the identification, research, and conservation of candidate species. F/PR is organizing a workshop in FY 2001 to convene experts on candidate species issues to refine criteria for identification of candidate species and to identify potential candidates. Through collaboration with these entities, it will be possible to develop comprehensive conservation programs that will benefit candidate species. Our partners will conduct important research through subcontracts.

5. What will it cost.

Saving white abalone from extinction and identifying, conducting research on, conserving candidate species and disseminating information will require a major commitment from NMFS of at least $2.39 million. Additional funds for research and conservation programs and personnel in the following years will be required.

What are we currently spending.

In FY 1997 through FY 2001, the Candidate Plus Program has conducted a competitive annual budget allocation process with an annual fund of $488K to fund candidate species proposals. This amount has

been helpful in bringing some attention to a few candidate species, but many worthwhile and important projects have not been funded. A total of $200K per year has also been available to fund "other listed species" work (shortnose sturgeon and Johnson's seagrass).

In FY 2000, F/PR provided rationale for an increase for the Candidate Plus Program and was able to fund five FTEs for the Candidate Plus Program. These FTEs will work on candidate species as well as "other listed species" actions. F/PR sent the SWFSC $72.8K in FY 2000 to help fund a white abalone survey.

In FY 2001, the Candidate Plus Program received a $600K increase, $400K of which will fund 4 FTEs to work on ESA actions for "other listed species" (shortnose sturgeon, Johnson's seagrass, white abalone). The remaining $200K was added to the $200K for "other listed species" projects to fund more work on shortnose sturgeon, Johnson's seagrass, and white abalone in FY 2001.

In FY 2002 the Candidate Plus Program did not receive any increase in funding.

Proposed Initiative 5-Year Funding

Component	FY2003	FY2004	FY2005	FY2006	FY2007
White abalone					
Stock assessment and Monitoring					
Shiptime	450	0	0	0	0
Overtime	50	0	0	0	0
Divers	60	0	0	0	0
Tagging	30	(15)	0	0	0
Habitat mapping	60	0	0	0	0
ROV Technician (1 FTE)	50	3	4	3	5
Equipment and Supplies	10	0	0	0	0
Mexican Partnership	40	0	0	0	0
Enhancement					
Aquaculture equipment	300	(200)	(50)	0	0
Aquaculture supplies	10	0	0	0	0
Genetic analysis	35	0	0	0	0
Pathology	40	0	0	0	0
Culture technician (1 FTE)	50	3	4	3	5
Contracts	100	0	(100)	0	0
Planting			100	0	50
Enforcement agents	100	100			
SUBTOTALS	**1,385**	**(109)**	**(42)**	**6**	**60**

Candidate Species

Candidate Plus FTEs in Science Centers	400		500		
Candidate Plus FTEs in Regions		500			

Candidate Plus FTE in F/PR	100				
Research & status reviews	512	500	500	500	500
Proactive conservation efforts		1,000	500	500	500
Subtotals	**1,012**	**2,000**	**1,500**	**1,000**	**1,000**
TOTALS	**2,397**	**1,891**	**1,458**	**1,006**	**1,060**

6. Results Year One

White abalone will be located in the field using a ship-based, Phantom ROV and the abalone's exact location recorded using a Trackpoint II system and DGPS. High resolution, GIS-referenced bottom topography images will be obtained of potential abalone habitat, using side scan sonar systems. The first year will be focused on developing tagging techniques, using red and pink abalone as surrogates. Acoustic pit tags will be placed on red and pink abalone, *in situ*, using marine epoxy and some animals will be relocated using a Phantom ROV. We will build the high-security brood-stock maintenance system and evaluate culture techniques using red and pink abalone. We will convene a meeting with Mexican scientists to discuss and develop a framework document for future Mexican surveys and joint research on white abalone. We will hold a meeting with California Sea Grant, and other US partners, to develop an educational strategy for protecting abalone from poaching.

An FTE will be hired in each science center, F/PR, and the SWR (enforcement) so that the program can be implemented in a focused and efficient manner. The current $488K in the "candidate species" annual allocation bin will be supplemented with $512K. Status reviews and/or research will be conducted for four species. Using the information gained from these milestones, we will determine whether several candidate species need to be listed under the ESA, and we will find out what can be done for several species to slow declines and promote recovery before listing becomes necessary.

Results Year Two (future research will be defined more fully later)

White abalone will be brought into the laboratory for culture by NOAA divers using mixed gas techniques. We will begin placing telemetry tags on white abalone in the field and continue to locate animals using the ROV and tracking system. High resolution, GIS-referenced bottom topography images will be obtained of potential abalone habitat, using side scan sonar systems. A second enforcement agent will be hired in the SWR.

An FTE will be hired in each region so that the needs of the species in this program can be addressed. Status reviews and/or research will be conducted on several more species. Information will be disseminated, and proactive conservation efforts will be funded. By working with state agencies, academia, environmental organizations, and other Federal agencies, we may be able to leverage funding for conservation programs.

Results Year Three

Culture efforts will continue with successful spawning as the primary goal. Fieldwork will continue with tagging, relocating, and monitoring white abalone as the major efforts. Preliminary estimates of natural mortality rates will be obtained from tagged animals.

A second FTE will be hired in each science center so that the needs of the species in this program can be addressed. More status reviews and research will be conducted; information will be disseminated; proactive conservation efforts will be funded.

Results Year Four

Black abalone will be included in culture efforts. Laboratory spawning of white abalone will be routine. Grow out of juvenile white abalone will be a major focus. Fieldwork will continue with tagging and relocating white abalone as a major effort. Estimates of natural mortality rates will be refined.

More status reviews and research will be conducted; information will be disseminated; proactive conservation efforts will be funded.

Results Year Five

White abalone will be restocked and monitored for the first time. Fieldwork will continue to focus on refining natural mortality rates. Tagging studies will also determine home range and diel movements.

More status reviews and research will be conducted; information will be disseminated; proactive conservation efforts will be funded.